0055643

SEVERN TRENT SERVICES

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CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

May 22, 2001

Attention: Keith Maki

SAF Number	:	B99-009
Date Samples Received	:	April 26, 2001
Number of Samples	:	Two (2)
Sample Type	:	Air
Data Deliverable	:	45 Day Data Package

I. Introduction

Two (2) air samples were received on April 26, 2001 by the STL Knoxville Laboratory for analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Bechtel Hanford, Inc. (BHI) specific ID:

STLKL ID#	BHI ID#	MATRIX	DATE OF RECEIPT
ECD6V	B11VY6	Air	4/26/01
ECD63	B11VY7	Air	4/26/01

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information and analytical results.

The requested analysis was:

Volatile Organics by TO-14

EDMC

III. Quality Control

The analytical results for the analysis performed includes a minimum of one Laboratory Control Sample (LCS).

Quality control sample results are reported in the same units as sample results.

IV. Comments

The original chain of custody documentation is included with this report.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Jamie McKinney
Project Manager

Sample Data Summary

BECHTEL HANFORD, INC.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H1D260153 001
Method: EPA-19 TO-14
Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)

Sample WT/Vol: / mL
Work Order: ECD6V1AA
Dilution factor: 1.95

Date Received: 04/26/01
Date Extracted:05/09/01
Date Analyzed: 05/09/01

QC Batch: 1137268

Client Sample Id: B11VY6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q
67-64-1	Acetone	9.8	U
56-23-5	Carbon tetrachloride	0.39	U
67-66-3	Chloroform	0.39	U
75-09-2	**Methylene chloride**	**0.61**	
127-18-4	Tetrachloroethene	0.39	U
79-01-6	Trichloroethene	0.39	U
78-93-3	**2-Butanone (MEK)**	**1.0**	

BECHTEL HANFORD, INC.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H1D260153 002
Method: EPA-19 TO-14
Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)

Sample WT/Vol: / mL Date Received: 04/26/01
Work Order: ECD631AA Date Extracted:05/09/01
Dilution factor: 604.7 Date Analyzed: 05/09/01

QC Batch: 1137268

Client Sample Id: B11VY7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q
67-64-1	Acetone	3000	U
56-23-5	Carbon tetrachloride	12000	
67-66-3	Chloroform	120	U
75-09-2	Methylene chloride	120	U
127-18-4	Tetrachloroethene	120	U
79-01-6	Trichloroethene	120	U
78-93-3	2-Butanone (MEK)	300	U

BECHTEL HANFORD, INC.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H1D260153 002
Method: EPA-19 TO-14
Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)

Sample WT/Vol: / mL Date Received: 04/26/01
Work Order: ECD631AC Date Extracted: 05/09/01
Dilution factor: 604.7 Date Analyzed: 05/09/01

QC Batch: 1137268

Client Sample Id: B11VY7 DUP

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q
67-64-1	Acetone	3000	U
56-23-5	Carbon tetrachloride	13000	
67-66-3	Chloroform	120	U
75-09-2	Methylene chloride	120	U
127-18-4	Tetrachloroethene	120	U
79-01-6	Trichloroethene	120	U
78-93-3	2-Butanone (MEK)	300	U

BECHTEL HANFORD, INC.
METHOD BLANK COMPOUNDS

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H1E170000 268
Method: EPA-19 TO-14
Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)

Sample WT/Vol: / mL Date Received: 04/26/01
Work Order: EDHW61AA Date Extracted: 05/09/01
Dilution factor: 1 Date Analyzed: 05/09/01

QC Batch: 1137268

Client Sample Id: INTRA-LAB BLANK

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q
67-64-1	Acetone	5.0	U
56-23-5	Carbon tetrachloride	0.20	U
67-66-3	Chloroform	0.20	U
75-09-2	Methylene chloride	0.20	U
127-18-4	Tetrachloroethene	0.20	U
79-01-6	Trichloroethene	0.20	U
78-93-3	2-Butanone (MEK)	0.50	U

BECHTEL HANFORD, INC.
CHECK SAMPLE COMPOUNDS

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H1E170000 268
Method: EPA-19 TO-14
Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)

Sample WT/Vol: 100 / mL Date Received: 04/26/01
Work Order: EDHW61AC Date Extracted:05/09/01
Dilution factor: 1 Date Analyzed: 05/09/01

QC Batch: 1137268

Client Sample Id: CHECK SAMPLE

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q
79-01-6	Trichloroethene	11	
71-43-2	Benzene	11	
108-90-7	Chlorobenzene	11	
75-35-4	1,1-Dichloroethene	11	
108-88-3	Toluene	11	

EPA-19 TO-14 SURROGATE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: BECHTEL HANFORD, INC.

Lab Code: STLKNX SDG No:

Lot #: H1D260153

	CLIENT ID.	SRG01	SRG02	SRG03	TOT OUT
01	B11VY6	105	100	103	00
02	B11VY7	103	95	99	00
03	METHOD BLK. EDHW61AA	103	98	101	00
04	LCS EDHW61AC	99	101	103	00
05	B11VY7 DUP	103	105	104	00

SURROGATES		QC LIMITS
SRG01	= 4-Bromofluorobenzene	(70-130)
SRG02	= 1,2-Dichloroethane-d4	(70-130)
SRG03	= Toluene-d8	(70-130)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

EPA-19 TO-14 CHECK SAMPLE RECOVERY

Lab Name: Severn Trent Laboratories, Inc. Client: BECHTEL HANFORD, INC.

Lab Code: STLKNX SDG No:

Lot #: H1E170000 WO #: EDHW61AC
BATCH: 1137268

COMPOUND	SPIKE ADDED (ppb(v)	SAMPLE CONCENT. (ppb(v)	% REC	QC LIMITS REC	QUAL
Benzene	10	11	109	70 - 130	
Chlorobenzene	10	11	110	70 - 130	
1,1-Dichloroethene	10	11	108	70 - 130	
Toluene	10	11	112	70 - 130	
Trichloroethene	10	11	110	70 - 130	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS:

BLANK WORKORDER NO.: EDHW61AA

EPA-19 TO-14 METHOD BLANK SUMMARY

Lab Name: Severn Trent Laboratories, Inc.

Lab Code: STLKNX

SDG Number:

Lab File ID: bk0509b.d

Lot Number: H1D260153

Date Analyzed: 05/09/01

Time Analyzed: 16:13

Matrix: AIR

Date Extracted:05/09/01

GC Column: DB-624 ID: .32

Extraction Method: TO-14

Instrument ID: MT

Level:(low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	B11VY6	ECD6V1AA	ecd6v.d	05/09/01	17:47
02	B11VY7	ECD631AA	ecd63r.d	05/09/01	21:19
03	B11VY7 DUP	ECD631AC X	ecd63d.d	05/09/01	21:53
04	CHECK SAMPLE	EDHW61AC C	rf0509.d	05/09/01	15:02
05					
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COMMENTS:

Sample Receipt Documentation

HD2600153

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-009-12	Page 1 of 1
Collector: Baechler/Johansen	Company Contact: K Maki	Telephone No.: 373-4989	Project Coordinator: TRENT, SJ	Price Code: 9N; Air Quality ☐
Project Designation: 200-ZP-1 Operations On-Site and Off-Site Air Monitor Samp	Sampling Location: 200 West		SAF No.: B99-009	Data Turnaround: 45 Days
Ice Chest No.: N/A	Field Logbook No.: EL 1330	COA: R20ZP1D760	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples Originated from a non RAD Controlled area. No TA Required.

Special Handling and/or Storage

Preservation	None										
Type of Container	Summa Canister										
No. of Container(s)	1										
Volume	6L										
SAMPLE ANALYSIS	See item (1) in Special Instructions.										
Sample No.	Matrix *	Sample Date	Sample Time								
B11VY6	GASEOUS	4/25/01	0908	X						HS-3	
B11VY7	GASEOUS	4/25/01	0912	X						HS-2	

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
M.L. Baechler/M.G. Johansen	4/25/01 1000	DS WATSON/	04/25/01 1000
DS WATSON/	04/25/01 1345	M. Arena 4000 CPM	4-25-01 13:45
M. ARENA M. Arena	4-25-01 14:20	David D. Flora	4-26-01 1030

SPECIAL INSTRUCTIONS

(1) VOA - TO-14 (2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene)

Recd temp. Ambient
NO Custody Seals
D.F. 4-26-01
Airborne # 1033409255
Returned 2 - Summa cans

Matrix *
S=Soil
SE=Sediment
SO=Solid
S=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
	David D. Flora STL-Knoxville	Sample control Tech	4-26-01 1030
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)

Figure 1. Sample Check-in List

Date/Time Received: 4-25-01 13:45

SDG#: _____

Work Order Number: _____ SAF# _____

Shipping Container ID: N/A Chain of Custody # BFG-009-12

1. Custody Seals on shipping container intact? Yes [ ] No [X]
2. Custody Seals dated and signed? Yes [ ] No [X]
3. Chain-of-Custody record present? Yes [ ] No [X]
4. Cooler temperature N/A
5. Vermiculite/packing materials is Wet [ ] Dry [ ]
6. Number of samples in shipping container: 2
7. Sample holding times exceeded? Yes [ ] No [X]

8. Samples have:
   - [X] tape
   - [ ] hazard labels
   - [ ] custody seals
   - [X] appropriate sample labels

9. Samples are:
   - [X] in good condition
   - [ ] leaking
   - [ ] broken
   - [ ] have air bubbles

10. Were any anomalies identified in sample receipt? Yes [ ] No [X]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Michelle Arens Date: 4-25-01

Telephoned to: _____ On _____ By _____

Volatiles

QC Summary

FORM 5
OTHER ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: STL - KNOXVILLE Contract: NA

Lab Code: NA Case No.: SAS No.: NA SDG No.: H1D260153

Lab File ID: BF0508 BFB Injection Date: 05/08/01

Instrument ID: MT BFB Injection Time: 1151

GC Column: DB-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.2
75	30.0 - 60.0% of mass 95	41.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	5.9 (7.2)1
176	95.0 - 101.0% of mass 174	78.8 (96.8)1
177	5.0 - 9.0% of mass 176	5.2 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	IC30	IC30	HI0508T	05/08/01	1225
02	1C15	IC15	MH0508T	05/08/01	1259
03	1C10	IC10	MD0508T	05/08/01	1332
04	IC05	IC05	ML0508T	05/08/01	1405
05	IC01	IC01	LW0508T	05/08/01	1441
06	ICRL	ICRL	RL0508T	05/08/01	1514
07					
08					
09					
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21					
22					

FORM 5
OTHER ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: STL - KNOXVILLE Contract: NA

Lab Code: NA Case No.: SAS No.: NA SDG No.: H1D260153

Lab File ID: BF0509B BFB Injection Date: 05/09/01

Instrument ID: MT BFB Injection Time: 1252

GC Column: DB-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.8
75	30.0 - 60.0% of mass 95	41.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	83.7
175	5.0 - 9.0% of mass 174	5.9 (7.0)1
176	95.0 - 101.0% of mass 174	81.1 (97.0)1
177	5.0 - 9.0% of mass 176	5.3 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV10	CCAL	MD0509	05/09/01	1429
02	LCS	EDHW61AC	RF0509	05/09/01	1502
03	BLANK	EDHW61AA	BK0509B	05/09/01	1613
04	B11VY6	ECD6V1AA	ECD6V	05/09/01	1747
05	B11VY7	ECD631AA	ECD63R	05/09/01	2119
06	B11VY7	ECD631AC	ECD63D	05/09/01	2153
07					
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20					
21					
22					

FORM 8
OTHER INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: STL - KNOXVILLE Contract: NA

Lab Code: NA Case No.: SAS No.: NA SDG No.: H1D260153

Lab File ID (Standard): MD0509 Date Analyzed: 05/09/01

Instrument ID: MT Time Analyzed: 1429

GC Column: DB-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

		IS1 (BCM) AREA #	RT #	IS2 (DFB) AREA #	RT #	IS3 (CBZ) AREA #	RT #
	12 HOUR STD	200688	9.18	956561	11.35	744569	15.97
	UPPER LIMIT	401376	9.68	1913122	11.85	1489138	16.47
	LOWER LIMIT	100344	8.68	478280	10.85	372284	15.47
	CLIENT SAMPLE NO.						
01	LCS	188962	9.19	890422	11.36	678859	15.98
02	BLANK	188636	9.16	898073	11.35	720423	15.97
03	B11VY6	192919	9.16	910901	11.34	728513	15.97
04	B11VY7	204888	9.17	970028	11.35	777057	15.97
05	B11VY7	203921	9.17	915970	11.34	716304	15.97
06							
07							
08							
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19							
20							
21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

STL Knoxville GC/MS Air Data Review / Narrative Checklist LOT/Project # HID260153

Method: TO-14 - KNOX-MS-0001 Rev 2 Page 1 of 1

Instrument:	MT					
Scanned File Names:	T050801i					
	T050901					

Review Items	N/A	Yes	No	Why is data reportable?	2nd ✓
A. Tune / Continuing Calibration					
1. Were all samples injected within 12 hr of BFB?		✓			✓
2. Has a **Continuing Calibration Checklist** been completed for each analytical batch?		✓			
3. Was the correct CCAL used for quantitation?		✓			
B. CLIENT SAMPLE AND QC SAMPLE Results	N/A	Yes	No		
1. Were all special project requirements met?		✓			
2. Were dilution factors/header information verified?		✓			
3. Are surrogates and internal standards within QC limits? (70-130% R for surr.; 50-150%R from CCAL for IS) *If no, list samples/reason (e.g., sur1):* Sample / Reason / Sample / Reason: _____		✓		☐[sur1] DUP surr. %R demonstrated same effect. ☐[sur2] Reanalysis demonstrated same effect. ☐**[sur5] At client's request, data was flagged as estimated & released without further investigation.*** ☐[is1] Per client, reanalysis was not performed * ☐[is2] Reanalysis confirmed a matrix effect.	
4. Were positive hits evaluated using qualitative identification criteria and technical judgement?		✓			
5. Are positive results within calibration range?		✓			
6. For dilutions, is highest concentration hit ≥ 5 ppb? *List samples and reason (e.g., elev1):* Sample / Reason / Sample / Reason: _____		✓		☐[elev1] Elevated RL for (ANALYTE) due to sample matrix interferences. ☐[elev3] Elevated RLs for all analytes due to difficult sample matrix. ☐[elev5] Elevated RLs for all analytes due to presence of non-target compounds.	
7. If manual integrations were performed, are they clearly identified, initialed, dated and reason given?		✓		Reasons: 1)Corrected split peak; 2)Unresolved peak; 3)tailing; 4)RT shift; 5)wrong peak selected; 6)other	
8. Have alternate hits/manual integrations been verified as correct?		✓			
9. Final report acceptable? (Results correct, RLs calculated correctly, units correct, surrogate %R correct, appropriate flags used, dilution factor correct, analysis dates correct.)		✓			
10. Was a narrative prepared and all deviations noted?		✓			
C. Preparation QC	N/A	Yes	No		
1. System blank run every 12 hours prior to samples?		✓			
2. System blank surrogate recoveries within QC limits (70-130% R)?		✓		☐[mb1] All sample surrogates OK and there is no analyte >RL in samples associated with blank.*	
3. Are all analytes present in the system blank ≤ RL? *If no, list blank ID:* _____		✓		☐[mb3] No analyte > RL in associated samples.* ☐[mb4] Sample results > 20x higher than blank. ☐[mb6] Common lab contaminant (methylene chloride/Freon) ≤2x RL.*	
4. DUP done per 20 samples and are all RPDs within limits? (for analytes >5x RL, ≤30 RPD for nonpolars; ≤40 RPD for polars; no criteria for methanol and n-butanol) *If no, list DUP ID:*		✓			
D. Other	N/A	Yes	No		
1. Are all nonconformances documented appropriately and copy included with deliverable?	✓				

Analyst: CWS	Date: 5/17/01	2nd Level Reviewer: KC	Date: 5/17/01
Comments:		Comments:	

* Such action must be taken in consultation with client.

RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 5/17/01
Time: 10:39:37

LEV 1	LEV 2		LEV 1	LEV 2	
_	_	Blank	_	_	Weights/Volumes
_	_	Check	_	_	Spike & Surrogate Worksheet
_	_	MS/MSD	_	_	Vial contains correct volume
			_	_	Labels, greenbars, worksheets
			_	_	computer batch: correct & all match
			_	_	Anomalies to Extraction Method

_ Expanded Deliverable
_ COC Completed
_ Bench Sheet Copied
_ Package Submitted to AnalyticalGroup
_ Bench Sheet Copied per COC

Extractionist: _____

Concentrationist: _____

QC BATCH: 1137268

PREP DATE: 5/09/01
COMP DATE: 5/09/01

Reviewer/Date: _____ / 0/00/00

Volatile Organics, (GCMS-TO14 Low Level) ppb(v/v)
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH*S INIT	PH*S ADJ1	PH*S ADJ2	SOLVENTS EXTRACTION	SOLVENTS VOL	SOLVENTS EXCHANGE	SOLVENTS VOL	SPIKE STANDARD/ SURROGATE ID
0/00/00	6/06/01	H1D260153-001													
		BCD6V-1-AA		88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-828 CX-772
COMMENTS:															
0/00/00	6/06/01	H1D260153-002 1137148													
		BCD63-1-AA		88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-828 CX-772
COMMENTS:															
0/00/00	6/06/01	H1D260153-002 1137148													
		BCD63-1-ACX		88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-828 CX-772
COMMENTS:															
0/00/00	0/00/00	H1E170000-268													
		BDBW6-1-AAB		88	JY	AIR	mL	NA	NA	NA		.0		.0	CX-828 CX-772
COMMENTS:															
0/00/00	0/00/00	H1E170000-268													
		BDBW6-1-ACC		88	JY	AIR	100mL 100.00mL	NA	NA	NA		.0		.0	CX-828 CX-772
COMMENTS:															

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD
$

NUMBER OF WORK ORDERS IN BATCH: 5

STL-Knoxville Initial Canister Dilution

Analyst: CWJ

Notebook: 2208 Page: 3

Barometer: 30.28 Inches Hg at sea level Date: 5/3/01
739.012 mm Hg at Knoxville

Lot #	W/O #	P init inches	P init Abs,mm	P final psig	P final Abs,mm	Dilution Factor	
H1D260153	ECD 6V	- 0.2	733.9	13.4	1432.0	1.95	(6V)
	ECD 63	0.0	739.0	13.0	1411.3	1.91	(63)

1 psig = 2.036 inch Hg
Pinit(Abs,mm)=(Pinit(inch)*25.4mm/inch)+Pbar(mm)
Pfinal(Abs,mm)=(Pfinal(psig)*2.036 (inch Hg/psig)*25.4 (mm/inch))+Pbar(mm)
dilution factor = Pfinal(Abs,mm)/Pinit(Abs,mm)
barometer: correction factor for 300 m altitude of Knoxville = 30.1 from Handbook of Chem and Physics
pressure in mm Hg = [(pressure at sea level in inches*25.4 mm/in) - 30.1]

cjcandil.xls
rev.03

STL-Knoxville Serial Dilution

Analyst: CWJ

Notebook: 2208 Page: 3

Barometer: 30.18 inches Hg at sea level Date: 5/9/01
736.472 mm Hg at Knoxville

Lot #	W/O #	Initial Volume (ml)	P final (psig)	P final Abs,mm	Dilution Factor (Serial)	Dilution Factor (Total)	
H1D260153	ECD 6V						
	ECD 63	240	12.8	1398.4	47.5	***90.7*** ✓	(63) (*1.91)

1 psig = 2.036 inch Hg
Pinit(Abs,mm)=(Pinit(inch)*25.4mm/inch)+Pbar(mm)
Pfinal(Abs,mm)=(Pfinal(psig)*2.036 (inch Hg/psig)*25.4 (mm/inch))+Pbar(mm)
dilution factor = Pfinal(Abs,mm)/[(initial vol.)(Pbar(mmHg))/6000]
barometer: correction factor for 300 m altitude of Knoxville = 30.1 from Handbook of Chem and Physics
pressure in mm Hg = [(pressure at sea level in inches*25.4 mm/in) - 30.1]

Sample Receipt Documentation

HID260153

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-009-12	Page 1 of 1
Collector: Baechler/Johansen	Company Contact: K Maki	Telephone No.: 373-4989	Project Coordinator: TRENT, SJ	Price Code: 9N; Air Quality ☐
Project Designation: 200-ZP-1 Operations On-Site and Off-Site Air Monitor Samp	Sampling Location: 200 West		SAF No.: B99-009	Data Turnaround: 45 Days
Ice Chest No.: N/A	Field Logbook No.: EL 1330	COA: R20ZP1D760	Method of Shipment: Hand Delivered	
Shipped To: Quanterra Incorporated	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples Originated from a non RAD Controlled area. No TA Required.

Special Handling and/or Storage

Preservation	None
Type of Container	Summa Canister
No. of Container(s)	1
Volume	6L

SAMPLE ANALYSIS

See item (1) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time		
B11VY6	GASEOUS	4/25/01	0908	X	HS-3
B11VY7	GASEOUS	4/25/01	0912	X	HS-2

CHAIN OF POSSESSION

Sign/Print Names			
Relinquished By: M.T. Baechler/M.T. Baechler	Date/Time: 4/25/01 1000	Received By: DSWATSON/	Date/Time: 04/25/01 1000
Relinquished By: DSWATSON/	Date/Time: 04/25/01 1345	Received By: M.Arens 4100CPM	Date/Time: 4-25-01 13:45
Relinquished By: M.ARENS M.Arens	Date/Time: 4-25-01 14:20	Received By: David D. Flora	Date/Time: 4-26-01 1030
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

SPECIAL INSTRUCTIONS

(1) VOA - T0-14 (2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene)

Recd temp. Ambient
NO Custody SEALS
D.F. 4-26-01
Airborne # 10331409255
Returned 2 - Summa cans

Matrix *: S=Soil; SE=Sediment; SO=Solid; S=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By: David D. Flora	STL-Knoxville	Title: Sample control Tech	Date/Time: 4.26.01 1030
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By	Date/Time

BHI-EE-011 (10/99)

Figure 1. Sample Check-in List

Date/Time Received: 4-25-01 13:45

SDG#: _____

Work Order Number: _____ SAF# _____

Shipping Container ID: N/A Chain of Custody # BFG-009-12

1. Custody Seals on shipping container intact? Yes [ ] No [X]
2. Custody Seals dated and signed? Yes [ ] No [X]
3. Chain-of-Custody record present? Yes [ ] No [X]
4. Cooler temperature N/A
5. Vermiculite/packing materials is Wet [ ] Dry [ ]
6. Number of samples in shipping container: 2
7. Sample holding times exceeded? Yes [ ] No [X]

8. Samples have:
   - [X] tape
   - [ ] hazard labels
   - [ ] custody seals
   - [X] appropriate sample labels

9. Samples are:
   - [X] in good condition
   - [ ] leaking
   - [ ] broken
   - [ ] have air bubbles

10. Were any anomalies identified in sample receipt? Yes [ ] No [X]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Melissa Arens Date: 4-25-01

Telephoned to: _____ On _____ By _____